Renewable Energy
Morrisville State College
Program and Facilities Overview
Meet the instructors

Dr. Ben Ballard

Dr. Phil Hofmeyer
Renewable Energy Training Center

Home

The Morrisville State College Renewable Energy Training Center (RETC) provides technical short courses for individuals seeking marketable skills in renewable energy fields. The RETC is an alliance of employers, training providers, economic development partners, and K-12 schools to address long-term and short-term needs of New York State’s renewable energy sector. Course curricula are based upon employer-identified skill gaps and needs. RETC short courses and MSC college courses focus on renewable energy resources and systems, including wind, solar, micro hydro, geothermal and bioenergy/biofuels. Short courses include technical entry-level training as well as continuing education for teachers and other professionals. College courses can be taken individually as continuing education or as part of a degree program in Renewable Energy Technology A.A.S. or Technology Management B.Tech. (renewable energy option).

The Central New York Region has significant natural capital to fuel a renewable energy industry, including wind, solar, hydro, geothermal and bioenergy. These industries require a skilled workforce from local communities to succeed. The success of these industries will boost the regional economy and reduce dependence on non-renewable energy resources.

The RETC was established in 2008 with support from a $2 million grant awarded under the President’s Community-based Job Training Grants, as implemented by the U.S. Department of Labor, Employment and Training Administration.

Morrisville State College is an EEO/AA employer.
Teaching Facilities
Wind/Solar/Hydro Lab
(104-B Shannon Hall)
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Bioenergy Lab (148 Galbreath)
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Hands-on Laboratories
Hands-on Laboratories

- RENG 310 – Biomass Energy Resources
Preparing oil samples for transesterification
Venison Biodiesel (mini-batch)

A. Deer fat
B. Rendered fat
C. Crude biodiesel
D. Crude glycerol
E. Washed biodiesel
Batch biodiesel processing (campus dining hall WVO)
Replacing a pump on the BioPro 190
Veggie car conversion
Tending the willow biomass demonstration plot at the Fenner Renewable Energy Education (FREE) Center
Willow biomass harvesting demonstrations
Old-field biomass assessment
Soil sampling/site assessment
Soil sampling
MSC Dairy Anaerobic Digester

250k gal. plug-flow digester

50kW ICE/electrical generator
Madison County Landfill Tour
Hands-on Laboratories

- RENG 410 – Bioenergy Conversions – Biochemical
Oil seed extraction
Oil seed extraction
Biodiesel
Biodiesel sample preparation/testing
Biodiesel titration and esterification
Biodiesel test batches – various feedstocks
Soap & Catalyst Titration (biodiesel)
Hands-on Laboratories

- RENG 415 – Bioenergy Conversions – Thermochemical
Biochar production process – strategizing
Biochar batch production run #1
Measuring wood samples
Measuring wood samples
Assessing Campus Biomass Residues for Energy Feedstocks
Wood gasification – Power Pallet
Hands-on Laboratories

- RENG 320 – Wind and Hydro Energy Systems
Raising the MET tower gin pole
Installing a micro hydro intake
Repairing a residential micro hydro turbine
Intake maintenance at the Galbreath Farm micro hydro site
Installing micro hydro turbine at the Galbreath Farm
Micro hydro site assessment
Assembling a Raum wind turbine
Assembling a Whisper wind turbine
Assembling an Air Breeze wind turbine
Hands-on Laboratories

- RENG 330 – Solar PV and Thermal Systems
Working on a mock solar roof
Installing a solar hot water system in Shannon Hall
Measuring module temperature and performance
Making final home run connections
Installing a solar hot water mock-up
Installing an evacuated tube collector
Soldering a solar hot water pipe connection
Roof safety first!
Installing a wind system brake switch

Photo by J. Robertson
Entering a main distribution panel

Photo by J. Robertson
Hands-on Laboratories

- RENG 225 – Tower Climbing and Rescue
Tower climbing ground crew

Photo by J. Robertson
Learning to go “hands free”

Photo by J. Robertson
Our wind facility

Photo by J. Robertson
Off duty?

Photo by J. Robertson
Up to 120 feet...

Photo by J. Robertson
Enjoying the view

Photo by J. Robertson
Tower climbing instruction

Photo by J. Robertson
Shannon Hall indoor climbing tower

Photo by J. Robertson
Rescue Randy needs a break
Real-world work experience

- Students working with local contractors
- Wind and solar product training
Wiring the alternator
Fortis Montana Installation
Tightening foundation bolts
Installing a MET tower
Measuring stream discharge
Priming an off-grid micro hydro system
Wiring an off-grid micro hydro system
Plumbing a wind turbine tower
Questions about the program?

Contacts:
Dr. Ben Ballard (bioenergy)
Email: ballarbd@morrisville.edu
Phone: 315-684-6780

Dr. Phil Hofmeyer (wind/solar/hydro)
Email: hofmeypv@morrisville.edu
Phone: 315-684-6515